Amendments to the Claims

Please cancel claims 4 and 5, amend claims 1, 6, 10, 15, 20, 33, 47 and 48, and add new claim 51. The Claim Listing below will replace all prior versions of the claims in the application:

Claim Listing:

1. (currently amended) A modified capsular oligosaccharide or polysaccharide comprising a moiety of the formula (I):

$$-A-N(R^1)-L-M \qquad (I)$$

wherein:

A is a bond, -C(O)- or -OC(O)-
R^1 is selected from H or C_1-C_6 alkyl;
L is ~~a C_1-C_{12} alkylene group~~ $-CH_2CH_2CH_2-$;
M is a masked aldehyde group.

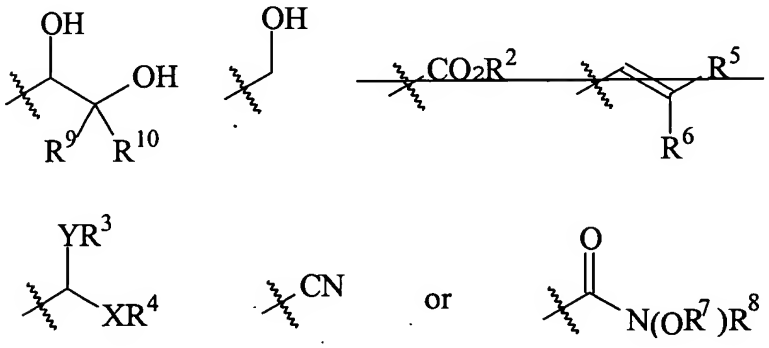
2. (original) The modified capsular saccharide of claim 1 wherein A is -OC(O)-.

3. (original) The modified capsular saccharide of claim 1 or 2 wherein R^1 is H.

4. (cancelled)

5. (cancelled)

6. (currently amended) ~~The~~ A modified capsular saccharide ~~of any one of claims 1 to 3~~ wherein the masked aldehyde is selected from:



wherein:

A is a bond, -C(O)- or -OC(O)-;
R^1 is selected from H or C_1-C_6 alkyl;
L is a C_1-C_{12} alkylene group;

R^2 is selected from H, C_1-C_{12} alkyl, C_3-C_{12} cycloalkyl, C_5-C_{12} aryl or C_{5-12} aryl-C_{1-6} alkyl;

X and Y are the same or different and are independently selected from O or S;

R^3 and R^4 are independently selected from C_1-C_{12} alkyl, C_3-C_{12} cycloalkyl, C_5-C_{12} aryl or C_{5-12} aryl-C_{1-6} alkyl; or R^3 and R^4 are joined to form a C_3, C_4, C_5, C_6, C_7 or C_8 cycloalkyl ring containing the heteroatoms X and Y;

R^5 and R^6 are independently selected from H, C_1-C_{12} alkyl, C_3-C_{12} cycloalkyl, C_5-C_{12} aryl or C_{5-12} aryl-C_{1-6} alkyl; or R^5 and R^6 are joined to form a C_3 or C_{12} cycloalkyl ring;

R^9 and R^{10} are independently selected from H, C_1-C_{12} alkyl, C_3-C_{12} cycloalkyl, C_5-C_{12} aryl or C_{5-12} aryl-C_{1-6} alkyl; or R^9 and R^{10} are joined to form a C_3 to C_{12} cycloalkyl ring; and

R^7 and R^8 are independently selected from C_1-C_{12} alkyl or C_3-C_{12} cycloalkyl groups.

7. (original) The modified capsular saccharide of claim 6 wherein the masked aldehyde is -CH(OH)CH_2OH.

8. (previously presented) The modified capsular saccharide of claim 1 comprising a moiety of the formula: -NH$(CH_2)_3$CH(OH)CH_2OH.

9. (previously presented) The modified saccharide of claim 1 comprising a moiety of the formula:
-OC(O)NH$(CH_2)_3$CH(OH)CH_2OH.

10. (currently amended) A modified capsular saccharide comprising a moiety of the formula (II):

-A-N(R^1)-L-C(O)H (II)

wherein A is a bond, -C(O)- or -OC(O)-; R^1 is selected from H or C_1-C_6 alkyl; and L is a C_1-C_{12} alkylene group ~~are as defined in any one of claims 1 to 3~~.

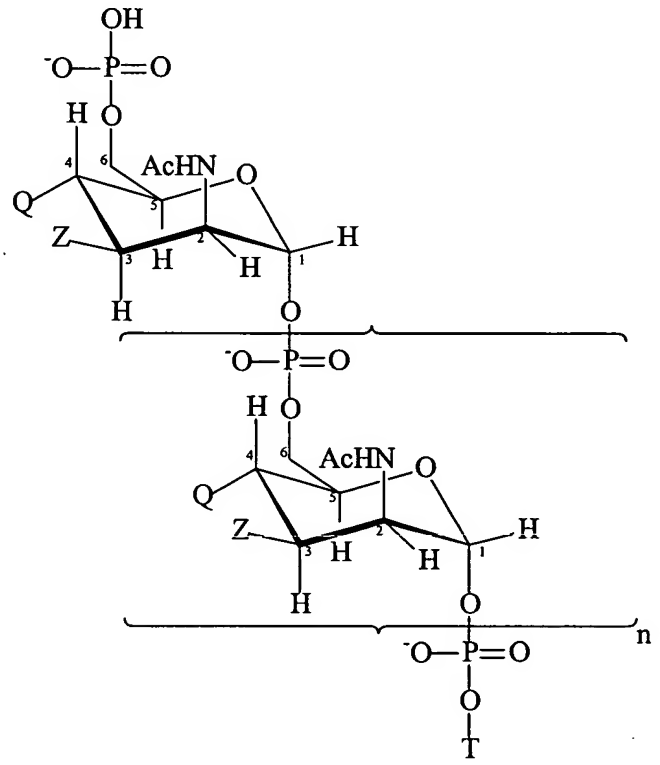
11. (original) The modified capsular saccharide of claim 10 wherein A is -OC(O)-.

12. (original) The modified capsular saccharide of claim 10 comprising a moiety of the formula: $-NH(CH_2)_3C(O)H$.

13. (previously amended) The modified capsular saccharide of claim 10 comprising a moiety of the formula: $-OC(O)NH(CH_2)_3C(O)H$

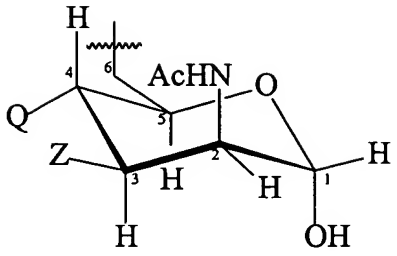
14. (previously presented) The modified capsular saccharide of claim 1 wherein the capsular saccharide is *Neisseria meningitidis* serogroup A saccharide.

15. (currently amended) A saccharide of the formula:

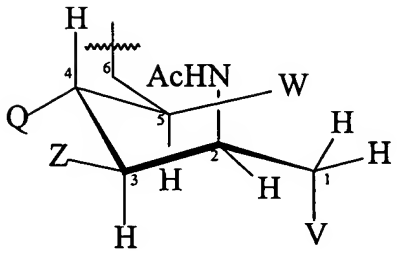


wherein:

T is of the formula (A) or (B):



(A)



(B)

n is an integer from 1 to 100;

each Z group is independently selected from -OH, -OAc, -OC(O)N(R^1)-L-M or -OC(O)N(R^1)-L-C(O)H;

each Q group is independently selected from -OH, -OAc, -OC(O)N(R^1)-L-M or -OC(O)N(R^1)-L-C(O)H;

W is selected from -OH, -OAc, -OC(O)N(R^1)-L-M or -OC(O)N(R^1)-L-C(O)H;

V is -N(R^1)-L-M or -N(R^1)-L-C(O)H;

wherein R^1 is selected from H or C_1-C_6 alkyl, L is a C_1-C_{12} alkylene group and M is a masked aldehyde group ~~are as defined in claims 1 to 3~~, and provided that the saccharide comprises at least one moiety of the formula -N(R^1)-L-M, -N(R^1)-L-C(O)H, -OC(O)N(R^1)-L-M or -OC(O)N(R^1)-L-C(O)H.

16. (original) The saccharide of claim 15 wherein n is an integer from 15 to 25.

17. (previously presented) The saccharide of claim 15 wherein T is of the formula (A).

18. (previously presented) The saccharide of claim 15 wherein Q and Z are a mixture of OH and OAc groups in essentially the same relative proportions as in the native *Neisseria meningitidis* serogroup A saccharide, with the exception that one of the Q or Z groups is -OC(O)N(R^1)-L-M or -OC(O)N(R^1)-L-C(O)H.

19. (original) The saccharide of claim 18 wherein one of the Q groups is -OC(O)N(R^1)-L-M or -OC(O)N(R^1)-L-C(O)H.

20. (currently amended) A process for modifying a capsular saccharide comprising the steps of:

(a) providing a capsular saccharide having a hydroxyl group;

(b) reacting the hydroxyl group with a bifunctional reagent in an organic solvent;

(c) reacting the product of step (b) with an amino compound of formula (III):

$$HN(R^1)\text{-}L\text{-}M \qquad (III)$$

wherein R^1 is selected from H or C_1-C_6 alkyl, L is a C_1-C_{12} alkylene group and M is a masked aldehyde group ~~are as defined in any one of claims 1 to 3~~.

21. (original) The process of claim 20 wherein the capsular saccharide is *Neisseria meningitidis* serogroup A saccharide.

22. (previously presented) The process of claim 20, wherein the organic solvent is an aprotic solvent.

23. (original) The process of claim 22 wherein the aprotic solvent is selected from dimethylsulfoxide (DMSO), dimethylformamide (DMF), formamide, hexamethylphosphoramide (HMPA), hexamethylphosphorus triamide (HMPT), 1,3-dimethyl-3,4,5,6-tetrahydro-2(1*H*)-pyrimidinone (DMPU) or dimethylacetamide (DMAC).

24. (previously presented) The process of claim 22 wherein the aprotic solvent is DMSO.

25. (previously presented) The process of claim 20 wherein the bifunctional reagent is selected from 1,1'-carbonyldiimidazole (CDI), carbonyl di-1,2,4-triazole (CDT), carbonyl di-1,2,3-benzotriazole (CDB), diphenylcarbonate, cyanogen bromide, phosgene or triphosgene.

26. (original) The process of claim 25 wherein the bifunctional reagent is CDI.

27. (previously presented) The process of claim 20 wherein the amino compound in step (c) is $H_2N(CH_2)_3CH(OH)CH_2OH$.

28. (previously presented) The process of claim 20, further comprising the step of (d) unmasking the masked aldehyde group M, thereby providing an aldehyde compound.

29. (original) The process of claim 28 wherein the masked aldehyde group M is $-CH(OH)CH_2OH$ and the unmasking step is a periodate cleavage.

30. (previously amended) The process of claim 28, further comprising the step of (e) linking the aldehyde compound to a protein by a reductive amination reaction.

31. (original) The process of claim 30 wherein the reducing agent in the reductive amination reaction is $NaBH_3CN$.

32. (previously presented) A process for modifying a *Neisseria meningitidis* serogroup A saccharide comprising the steps of:

    (a) providing a *Neisseria meningitidis* serogroup A saccharide;

    (b) reacting a hydroxyl group on the saccharide with CDI in DMSO solvent;

    (c) reacting the product of step (b) with $H_2N(CH_2)_3CH(OH)CH_2OH$;

    (d) cleaving the product of step (c) with periodate, thereby providing an aldehyde compound; and

    (e) linking the aldehyde compound of step (d) to a protein by a reductive amination reaction using $NaBH_3CN$.

33. (currently amended) A saccharide-protein conjugate wherein the saccharide and protein moieties are linked via a group of formula (IV):

$$-A-N(R^1)-L-NH- \qquad (IV)$$

wherein A is a bond, -C(O)- or -OC(O)-; R^1 is selected from H or C_1-C_6 alkyl; and L is a C_1-C_{12} alkylene group ~~are as defined in any one of claims 1 to 3~~.

34. (previously presented) A saccharide-protein conjugate of claim 33 wherein R^1 is H, A is -OC(O)- and L is $-(CH_2)_4-$.

35. (previously presented) The conjugate of claim 33 wherein the saccharide is a *Neisseria meningitidis* serogroup A saccharide.

36. (previously presented) The conjugate of claim 33 wherein the protein is a bacterial toxin or toxoid.

37. (original) The conjugate of claim 36 wherein the bacterial toxin or toxoid is diphtheria toxin or toxoid.

38. (previously presented) The conjugate of claim 36 wherein the bacterial toxin or toxoid is CRM_{197}.

39. (previously presented) A pharmaceutical composition comprising the saccharide-protein conjugate of claim 33 and a pharmaceutically acceptable carrier.

40. (original) The composition of claim 39, further comprising a vaccine adjuvant.

41. (original) The composition of claim 40, which is a vaccine against a disease caused by *Neisseria meningitidis*.

42. (original) A method for raising an antibody response in a mammal, comprising administering the pharmaceutical composition of claim 39 to the mammal.

43. (previously presented) A pharmaceutical composition comprising the modified saccharide of claim 1 and a pharmaceutically acceptable carrier.

44. (previously presented) A method for immunising a mammal comprising administering to the mammal the pharmaceutical composition of claim 39.

45. (previously presented) A method for immunising a mammal, comprising administering to the mammal the pharmaceutical composition of claim 43.

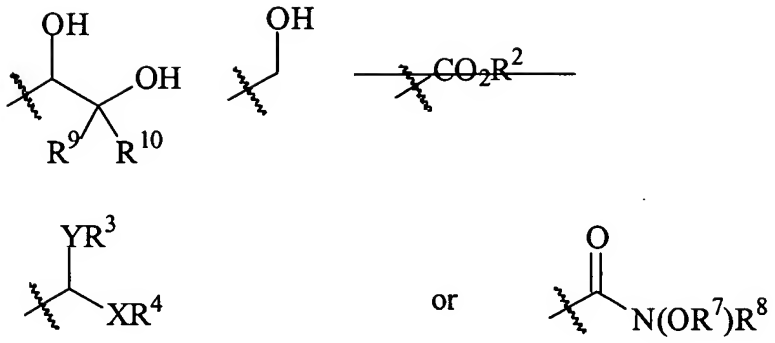
46. (cancelled)

47. (currently amended) A modified capsular saccharide comprising a moiety of the formula (I):

$$-A-N(R^1)-L-M \qquad (I)$$

wherein:

A is a bond, -C(O)- or -OC(O)-
R^1 is selected from H or C_1-C_6 alkyl;
L is a C_1-C_{12} alkylene group;
M is a masked aldehyde group, wherein the masked aldehyde is selected from:



wherein:

R^2 is selected from H, C_1-C_{12} alkyl, C_3-C_{12} cycloalkyl, C_5-C_{12} aryl or C_{5-12} aryl-C_{1-6} alkyl;

X and Y are the same or different and are independently selected from O or S;

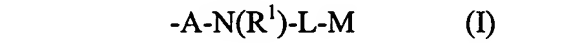
R^3 and R^4 are independently selected from C_1-C_{12} alkyl, C_3-C_{12} cycloalkyl, C_5-C_{12} aryl or C_{5-12} aryl-C_{1-6} alkyl; or R^3 and R^4 are joined to form a C_3, C_4, C_5, C_6, C_7 or C_8 cycloalkyl ring containing the heteroatoms X and Y;

R^5 and R^6 are independently selected from H, C_1-C_{12} alkyl, C_3-C_{12} cycloalkyl, C_5-C_{12} aryl or C_{5-12} aryl-C_{1-6} alkyl; or R^5 and R^6 are joined to form a C_3 or C_{12} cycloalkyl ring;

R^9 and R^{10} are independently selected from H, C_1-C_{12} alkyl, C_3-C_{12} cycloalkyl, C_5-C_{12} aryl or C_{5-12} aryl-C_{1-6} alkyl; or R^9 and R^{10} are joined to form a C_3 to C_{12} cycloalkyl ring; and

R^7 and R^8 are independently selected from C_1-C_{12} alkyl or C_3-C_{12} cycloalkyl groups.

48. (currently amended) A modified capsular saccharide comprising a moiety of the formula (I):



(I)

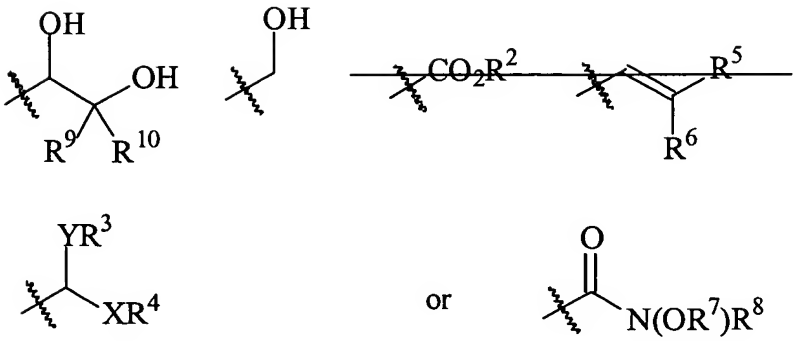
wherein:

A is a bond, -C(O)- or -OC(O)-

R^1 is selected from H or C_1-C_6 alkyl;

L is a C_1-C_6 alkylene group;

M is a masked aldehyde group, wherein the masked aldehyde is selected from:



wherein:

R^2 is selected from H, C_1-C_{12} alkyl, C_3-C_{12} cycloalkyl, C_5-C_{12} aryl or C_{5-12} aryl-C_{1-6} alkyl;

X and Y are the same or different and are independently selected from O or S;

R^3 and R^4 are independently selected from C_1-C_{12} alkyl, C_3-C_{12} cycloalkyl, C_5-C_{12} aryl or C_{5-12} aryl-C_{1-6} alkyl; or R^3 and R^4 are joined to form a C_3, C_4, C_5, C_6, C_7 or C_8 cycloalkyl ring containing the heteroatoms X and Y;

R^5 and R^6 are independently selected from H, C_1-C_{12} alkyl, C_3-C_{12} cycloalkyl, C_5-C_{12} aryl or C_{5-12} aryl-C_{1-6} alkyl; or R^5 and R^6 are joined to form a C_3 or C_{12} cycloalkyl ring;

R^9 and R^{10} are independently selected from H, C_1-C_{12} alkyl, C_3-C_{12} cycloalkyl, C_5-C_{12} aryl or C_{5-12} aryl-C_{1-6} alkyl; or R^9 and R^{10} are joined to form a C_3 to C_{12} cycloalkyl ring; and

R^7 and R^8 are independently selected from C_1-C_{12} alkyl or C_3-C_{12} cycloalkyl groups.

49. (previously presented) The modified capsular saccharide of claim 47 or 48 wherein R^1 is H.

50. (previously presented) The modified capsular saccharide of claim 47 or 48 wherein A is –OC(O)–.

51. (new) The modified capsular saccharide of claim 47, wherein L is $-CH_2CH_2CH_2-$.